

REMARKS

Applicants have studied the Office Action dated February 3, 2005 and have made amendments to the claims. It is submitted that the application, as amended, is in condition for allowance. By virtue of this amendment, claims 1-4, 6, 8, 14, and 17-23 are pending. Claims 1, 6, 14, 18, and 20 are amended. Reconsideration and allowance of the pending claims in view of the above amendments and the following remarks is respectfully requested.

In the Office Action, the Examiner:

- (Page 2, para. 1) denied granting priority to the filing date of the parent application;
- (Page 2, para. 2) objected to claims 1 and 6 due to specified informalities;
- (Page 3, para. 1) rejected claims 1-3, 6, 8 14 and 17-22 under 35 U.S.C. § 112, first paragraph as containing subject matter not properly described in the specification;
- (Page 4, para. 2) rejected claims 1-4, 6 and 8 under 35 U.S.C. § 102(e) as being anticipated by Glowina et al (U.S. Patent No. 6,485,599);
- (Page 6, para. 1) rejected claims 1-3 under 35 U.S.C. § 103(a) as being unpatentable over Inou (U.S. Patent No. 5,793,461);
- (Page 7) allowed claim 23.

(Page 7) Allowable Subject Matter

The Applicants wish to thank Examiner Landau for indicating the allowable subject matter of claim 23.

(Page 2, para. 3) Rejection under 35 U.S.C. § 112

As noted above, the Examiner rejected claims 1-3, 6, 8 14 and 17-22 under 35 U.S.C. § 112, first paragraph, for containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. Specifically, the Examiner stated that the limitations of Independent claims 1, 6, 18 and 20, "with a pulse duration greater than 21 ns", is not supported in the specification. Office Action dated February 3, 2005, page 3, para 2.

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The Applicants have amended claims 6, 14, 18 and 20 to remove the specification of "with a pulse duration of greater than 21 ns." No new matter has been added by these amendments. The Applicants respectfully assert that this amendment overcomes the Examiner's rejection under 35 U.S.C. §112, first paragraph with regards to these claims.

With regards to claim 1, the Applicants respectfully re-assert their position that the specification as filed adequately describes this claim limitation and therefore this claim limitation does not constitute "new matter" as asserted by the Examiner. As noted by the Examiner, the specification as originally filed stated that the pulsed laser can have pulse widths that can vary from "femto-second to continuous wave." Support for this range is found in the specification of the present invention as originally filed at the bottom of page 5 continuing on the top of page 6. As is known by those having ordinary skill in the art, the prefix "femto" indicates one quadrillionth (10^{-15}) of a unit and "continuous", as defined by Merriam-Webster's 2004 Dictionary, means "marked by uninterrupted extension in space, time, or sequence." Therefore, as defined by the specification of the instant application as filed, the pulse width of the present invention can vary from one quadrillionth of a second to infinity.

MPEP § 2163.05 recites that each claim limitation must be expressly, implicitly, or inherently supported in the originally filed disclosure. "With respect to changing numerical range limitations, the analysis must take into account which ranges one skilled in the art would consider inherently supported by the discussion in the original disclosure." MPEP § 2163.05 (III).

The Applicants further respectfully assert that using pulsed lasers was contemplated by the teachings of the Applicants' specification. For example, the specification states: "a laser, preferable a pulsed laser, is used to scan near the periphery of two substrates to be affixed to one another." Specification, page 6, lines 22-24.

Claim 1, as previously amended, recites "with a pulse duration greater than 21 ns".

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This limitation defines a range from 21 ns (one billionth (10^{-9})) to a continuous, or non-interrupted, pulse width. Because the range **one billionth to continuous ($10^{-9} - 0$) is a subset of the range one quadrillionth to continuous ($10^{-15} - 0$)**, which is expressly defined in the specification of the instant application, it is respectfully submitted that Applicants' previous amendment narrowed the scope of the claim limitations, did not add new material, and was fully supported by the specification as originally filed.

It is accordingly believed that the specification and claims 2 and 3 which depend from independent claim 1, also meet the requirements of 35 U.S.C. § 112, first paragraph. As discussed above, claims 6, 14, 18 and 20 have been amended to remove this limitation, and therefore claims 8 and 17-22, which depend from claims 6, 18 and 20, also meet the requirements of 35 U.S.C. § 112, first paragraph.

(Page 4, para 2) Rejection Under 35 U.S.C. § 102(e)

As noted above, the Examiner rejected claims 1-4, 6 and 8 under 35 U.S.C. § 102(e) as being anticipated by Glowina et al (U.S. Patent No. 6,485,599). The Examiner cites 35 U.S.C. § 102(e) and a proper rejection requires that a single reference teach (i.e., identically describe) each and every element of the rejected claims as being anticipated by Glowina.¹

As an initial matter, the Applicants have amended claims 1 and 6 in response to the Examiner's objections stated on page 2 of the office action dated February 3, 2005. The Applicants have deleted redundant text in the preamble of claim 1, and have removed redundant text, as suggested by the Examiner, from claim 6. No new matter has been added by these amendments.

Further, in accordance with MPEP §715.01(a), the applicants have submitted an

¹ See MPEP §2131 (Emphasis Added) "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the ... claim."

unequivocal declaration under 37 C.F.R. §1.132 that two of the co-inventors of the subject patent application, i.e., Robert J. von Gutfeld and James H. Glownia, also invented the subject matter disclosed in the cited Glownia reference - U.S. Patent Number 6,485,599. The Applicants respectfully assert that the facts declared in the attached declaration under 37 C.F.R. §1.132 disqualifies the Glownia reference from being used against the present invention, and that the rejection under 35 U.S.C. §102(e) should be withdrawn.

With further regards to independent claims 1, 4, and 6, the Applicants also respectfully assert that the Glownia reference fails to teach the claimed limitations of:

applying a non-epoxy glue sealant along an outer periphery of a first substrate;
placing a second substrate onto the first substrate containing the non-epoxy glue sealant.

The Examiner characterizes the Glownia reference as disclosing, *inter alia*, the above two limitations. Office Action dated February 3, 2005, page 4, fourth paragraph, citing Glownia, Col 2, lines 45-54 and col. 4 lines 59-67. The Applicants respectfully assert that the Glownia reference does not teach the combination of this two-step process as is set forth in claims 1, 4, 6, 14 18 and 20. Glownia does state that a "glue seal 105 is deposited near an outer edge along the entire periphery to affix the two substrates to one another." Glownia, col. 4, lines 48-50. The Applicants respectfully assert, however, that Glownia is silent as to how the glue seal is deposited and how the two substrates are placed into the disclosed structure. In particular, the Applicants respectfully assert that the step of "placing a second substrate onto the first substrate containing the non-epoxy glue sealant" is not taught by the Glownia reference.

The Applicants further respectfully assert that the combination of the above two steps of these independent claims is not an inherent characteristic of the Glownia disclosure.

The fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957

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(Fed. Cir. 1993) (reversed rejection because inherency was based on what would result due to optimization of conditions, not what was necessarily present in the prior art); *In re Oelrich*, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981). "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.' " *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted) (The claims were drawn to a disposable diaper having three fastening elements. The reference disclosed two fastening elements that could perform the same function as the three fastening elements in the claims. The court construed the claims to require three separate elements and held that the reference did not disclose a separate third fastening element, either expressly or inherently.).

"In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original) (Applicant's invention was directed to a biaxially oriented, flexible dilation catheter balloon (a tube which expands upon inflation) used, for example, in clearing the blood vessels of heart patients). The examiner applied a U.S. patent to Schjeldahl which disclosed injection molding a tubular preform and then injecting air into the preform to expand it against a mold (blow molding). The reference did not directly state that the end product balloon was biaxially oriented. It did disclose that the balloon was "formed from a thin flexible inelastic, high tensile strength, biaxially oriented synthetic plastic material." *Id.* at 1462 (emphasis in original). The examiner argued that Schjeldahl's balloon was inherently biaxially oriented. The Board reversed on the basis that the examiner did not provide objective evidence or cogent technical reasoning to support the conclusion of inherency.).

MPEP §2112(IV) (emphasis in original).

As discussed above, the Applications respectfully assert that the Glownia reference does not anticipate the invention set forth in the independent claims of the pending application. The Applicants further point out that the Glownia reference would not be properly applied under 35 U.S.C. §103. The Applicants have attached an affidavit

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under 37 C.F.R. §1.132 stating that the subject matter of the Glownia reference was conceived of and invented by two of the three inventors of the present invention. Further, the Applicants note that the subject matter of the Glownia reference and of the subject matter of the subject patent application were, at the time the invention was made, subject to an obligation of assignment to the same assignee, International Business Machines, as duly recorded on reel/frame 012045/0487. This common obligation of assignment disqualifies the Glownia reference, under MPEP §706.02(I)(2), from being used against the present invention.

Additionally, Applicants note that amended dependent claims 2-3, 8, 17, 18, 19, and 21-22 depend from independent claims 1, 6, and 14, respectively. As discussed above, amended independent claims 1, and 6 distinguish over the Glownia reference. The Applicants further assert that independent claim 14 also includes the above discussed limitations that distinguish over the Glownia reference. Since dependent claims include all of the limitations of the independent claims from which they depend, Applicants further assert that amended dependent claims 2-3, 8, 17, 18, 19, and 21-22 also distinguish over the Glownia reference as well. Therefore, Applicants respectfully assert that the Examiner's rejection under 35 U.S.C. §102(e) over Glownia should be withdrawn.

(Page 6, para 1) Rejection Under 35 U.S.C. § 103(a)

The Examiner rejected claims 1-3 under 35 U.S.C. § 103(a) as being unpatentable over *Inou*, U.S. Patent No. 5,793,461 (hereinafter "*Inou*"). The Examiner recites 35 U.S.C. §103. The Statute expressly requires that obviousness or non-obviousness be determined for the claimed subject matter "as a whole," and the key to proper determination of the differences between the prior art and the present invention is giving full recognition to the invention "as a whole."

Before discussing the prior art in detail, it is believed that a brief review of the invention, as claimed, would be helpful. Amended independent claim 1 recites, *inter alia*:

1... irradiating the glue sealant with laser beam radiation to polymerize the sealant by directing light onto one of the first or the

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second substrate that is at least partially transparent to the laser beam, the laser beam consisting of **one of a continuous wave laser and a pulsed laser with a pulse duration greater than 21 ns.** (Emphasis added).

The Applicants respectfully re-assert their position that Inou teaches away from the use of a long pulse width laser. The Inou reference discloses a method of laminating two substrates 4 & 5 by utilizing two laser beams 12 & 14 to photopolymerize a seal 8. Inou, col. 6, lines 9-31. In Inou, the speed of photopolymerization is an essential element of the method. In fact, the first laser, a carbon dioxide gas laser 13, is utilized for the purpose of accelerating the photopolymerization process. As explained in col. 6, lines 34 – 40 of Inou, the dual laser method is used so that the carbon dioxide laser 13, which produces a carbon dioxide laser beam 14, heats the seal 8 and accelerates the time necessary for the excimer laser 11 to irradiate the seal 8. Inou expressly sets an upper pulse-width limit of 20 ns, which the invention of Inou is not to exceed. Inou discloses, in col. 6, lines 41-43, that the excimer laser beam 12 emits a pulse-wise beam of light 16 with a periodic time up to 20 ns to irradiate a myriad of light quantum. Therefore, the laser of the purpose and intent of the Inou invention is to not exceed 20 ns.

The Applicants respectfully assert that the above cited teachings of Inou would discourage one skilled in the art from using lasers with longer pulse durations.

Clearly, Inou does not show a "laser beam consisting of one of a continuous wave laser and a pulsed laser with a pulse duration greater than 21 ns", as recited in amended claim 1 of the instant application.

It is accordingly believed to be clear that Inou, neither shows nor suggests the features of claim 1. Claims 2-3 depend from independent claim 1. Since dependent claims contain all the limitations of the independent claims, claims 2-3 distinguish over Inou as well, and the Examiner's rejection should be withdrawn.

CONCLUSION

The remaining cited references have been reviewed and are not believed to affect the patentability of the claims as amended.

In this Response, Applicants have amended certain claims. In light of the Office Action, Applicants believe these amendments serve a useful clarification purpose, and are desirable for clarification purposes, independent of patentability. Accordingly, Applicants respectfully submit that the claim amendments do not limit the range of any permissible equivalents.

Applicants acknowledge the continuing duty of candor and good faith to disclosure of information known to be material to the examination of this application. In accordance with 37 CFR §1.56, all such information is dutifully made of record. The foreseeable equivalents of any territory surrendered by amendment are limited to the territory taught by the information of record. No other territory afforded by the doctrine of equivalents is knowingly surrendered and everything else is unforeseeable at the time of this amendment by the Applicants and their attorneys.

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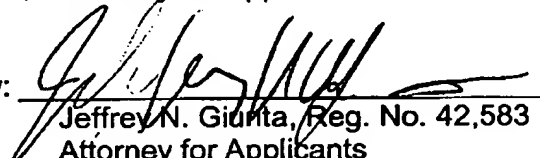
Applicants respectfully submit that all of the grounds for rejection stated in the Examiner's Advisory Office Action have been overcome, and that all claims in the application are allowable. No new matter has been added. It is believed that the application is now in condition for allowance, which allowance is respectfully requested.

PLEASE CALL the undersigned if that would expedite the prosecution of this application.

Respectfully submitted,

Date: May 3, 2005

By: 
Jon Gibbons, Reg. No. 37,333
Attorney for Applicants

By: 
Jeffrey N. Giunta, Reg. No. 42,583
Attorney for Applicants

FLEIT, KAIN, GIBBONS, GUTMAN
BONGINI & BIANCO P.L.
551 N.W. 77th Street, Suite 111
Boca Raton, FL 33487
Tel (561) 989-9811
Fax (561) 989-9812

Please Direct All Future Correspondence to Customer Number 23334

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